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(54) MOBILE PHONE, CHARACTER DISPLAY METHOD, PROGRAM, AND INFORMATION PROCESSOR

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a mobile phone which is suitable for health management and recognition of a mental state.

SOLUTION: The mobile phone can communicate with a server through the Internet. The mobile phone is provide with a sensor for detection of bio- information. When the mobile phone is used (S601), bio-information is detected by the sensor (S602 and S603). This information is temporarily recorded in a bio-data recording part (S604). When a user performs a prescribed processing, this data is sent to the server (S605). The server determines a character on the basis of this data (S606) and generates picture data for display of this character on a display device of the mobile phone (S607). This picture data is returned to the mobile phone (S608). The character

changed on the basis of bio- information is displayed on the display device of the mobile phone on the basis of this picture data (S609).

CLAIMS

[Claim(s)]
[Claim 1] It is the cellular phone which comes to prepare for the front face of the body section the display which can display the image of a predetermined character. From temperature, humidity, and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, The cellular phone which comes to have an image-processing means to display the image of said character changed based on said biological information which this reception means received on said display.
[Claim 2] It is the cellular phone which comes to prepare for the front face of the body section the display which can display a predetermined character. Between the predetermined information processors which generate the image data for displaying the predetermined character which changes based on predetermined biological information on said display From the means of communications which communicates

through a predetermined network, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, A record means to record said biological information which said reception means received, and a means to transmit said biological information currently recorded on said record means to said information processor to predetermined timing, The cellular phone which has a means to receive the image data generated based on the biological information through said network from said information processor, and a means to display the image of a character on said display based on the received image data.

[Claim 3] Said sensor means is a cellular phone according to claim 1 or 2 which it comes to attach in said body section.

[Claim 4] Said sensor means is a cellular phone according to claim 1 or 2 which it comes to prepare in the part which the hand contacts in case a user uses a cellular phone among said body sections.

[Claim 5] Said sensor means is a cellular phone according to claim 4 which it comes to prepare in the tooth back of said body section.

[Claim 6] Said sensor means is a cellular phone according to claim 1 or 2 which detects said biological information at the time of use of a cellular phone.

[Claim 7] In the body section with which the front face is equipped, the display which can display the image of a predetermined character A control means, From temperature, humidity, and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, It is the approach performed with a cellular phone. ************ —— said control means The process in which the biological information which contains at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body from said sensor means is received, The character method of presentation which performs the process which displays the image of said character changed based on said biological information which this reception means received on said display.

[Claim 8] In the body section with which the front face is equipped, the display which can display the image of a predetermined character A control means, From temperature, humidity, and a predetermined sensor means to detect at least one of the vibration While the reception means and ** which receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's

skin, and the oscillating information about vibration produced on a user's body are prepared To said computer of the cellular phone which comes to contain a computer, from said sensor means The processing which receives the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, The program in which computer reading for performing processing which displays the image of said character changed based on said biological information which this reception means received on said display is possible.

[Claim 9] Between the predetermined information processors which generate the image data for displaying the predetermined character which changes to the body section which equips the front face with the display which can display a predetermined character based on predetermined biological information on said display The means of communications which communicates through a predetermined network, a control means, and temperature, The temperature information about temperature of humidity and a predetermined sensor means to detect at least one of the vibration to a user's skin, A reception means to receive the biological information containing at least one of the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, The process in which are the approach performed with a record means to record said biological information, and the cellular phone, with which it comes to prepare **, and said control means records said biological information which said reception means received on said record means, The process in which said biological information currently recorded on said record means is transmitted to said information processor to predetermined timing, The character method of presentation which performs the process in which the image data generated based on the biological information is received through said network from said information processor, and the process which displays the image of a character on said display based on the received image data.

[Claim 10] Between the predetermined information processors which generate the image data for displaying the predetermined character which changes to the body section which equips the front face with the display which can display a predetermined character based on predetermined biological information on said display From the means of communications which communicates through a predetermined network, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, The processing which records said biological information which said reception means received to said computer of the cellular phone containing a computer on said record means while the record means and ** which record said biological information are

prepared, The processing which transmits said biological information currently recorded on said record means to said information processor to predetermined timing, The processing which receives the image data generated based on the biological information through said network from said information processor, The program in which computer reading for performing processing which displays the image of a character on said data display based on the received image data is possible.

[Claim 11] The means of communications which communicates through a predetermined network in the body section which equips the front face with the display which can display a predetermined character, From a control means, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, Between a record means to record said biological information, and the cellular phone, with which it comes to prepare ** Are the information processor which communicates through said network, it is received with said receptionist means, and said means of communications and network are minded for the biological information recorded on said record means. The means received from said cellular phone to predetermined timing, and a means to generate the image data for displaying on the display of said cellular phone said character which changes based on the biological information, An information processor equipped with a means to transmit said image data to said cellular phone through said network and said means of communications.

[Claim 12] The means of communications which communicates through a predetermined network in the body section which equips the front face with the display which can display a predetermined character, From a control means, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, Between a record means to record said biological information, and the cellular phone, with which it comes to prepare ** It is the approach performed with the information processor which communicates through said network and comes to have an information processing means. Said information processing means is received with said receptionist means, and minds said means of communications and network for the biological information recorded on said record means. The process received from said cellular phone to predetermined timing, and the process which generates the image data for displaying on the display of said cellular phone said character which changes based on the biological information, The information processing approach of performing the process in which said image data is transmitted to said cellular phone through said network

and said means of communications.
[Claim 13] The means of communications which communicates through a predetermined network in the body section which equips the front face with the display which can display a predetermined character, From a control means, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, Between a record means to record said biological information, and the cellular phone, with which it comes to prepare ** To said computer of the information processor which communicates through said network and comes to contain a computer It is received with said receptionist means and said means of communications and network are minded for the biological information recorded on said record means. The processing received from said cellular phone to predetermined timing, and the processing which generates the image data for displaying on the display of said cellular phone said character which changes based on the biological information, The program which performs processing which transmits said image data to said cellular phone through said network and said means of communications and in which computer reading is possible.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to a cellular phone.
[0002]
[Description of the Prior Art] In recent years, the program for forming browser ability is carried and the intelligent cellular phone whose perusal of a web page was enabled has spread. There are some by which the environment for performing a Java ("Java" being trademark of Sun Microsystems, Inc.) program was prepared into these intelligent cellular phones, and a cellular phone is becoming a thing beyond the function as a mere telephone.
[0003] In such the present condition, various games which can be performed with a cellular phone, and service are offered. However, since it is only an input means of a press type by which the input means formed in the cellular phone is made into representation at a ten key, the game performed with a cellular phone and service tend to become deficient in change.
[0004] On the other hand, it rides on a fitness boom from the former, and various

pocket equipments which made health the keyword are developed. For example, they are the measuring device of a body fat percentage, equipment which measures the moisture of the skin. Such pocket equipment that made the keyword "health" and "grasp of a state of mind" has come to form a respectively fixed commercial scene. With a cellular phone, if the function of these pocket equipment is realizable in the condition with a certain amount of play, the function which did not have the **** profit in a cellular phone conventionally will be given, and new need can be evoked. A user carries a cellular phone, and since it is the device by which having in a hand still more frequently is expected, it is suitable for using for the health care and the application of grasp of a state of mind.

[0005] However, the input unit with which a general cellular phone is equipped has not realized use for such an application.

[0006]

[Problem(s) to be Solved by the Invention] This invention aims at offering the health care and the cellular phone suitable for performing grasp of a state of mind.

[0007]

[Means for Solving the Problem] It is the following cellular phones which an invention-in-this-application person proposes. The cellular phone of this invention is divided roughly into two. The cellular phones concerning the 1st invention are as follows. The cellular phone concerning the 1st invention is a cellular phone which comes to prepare for the front face of the body section the display which can display the image of a predetermined character. and from temperature, humidity, and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, It comes to have an image-processing means to display the image of said character changed based on said biological information which this reception means received on said display. This cellular phone is equipped with a reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body from a predetermined sensor means. And suppose the image-processing means that the image of a predetermined character is displayed on a display based on the biological information received with the reception means. therefore, it is alike and this cellular phone becomes health care, such as condition management, and the suitable thing. In addition, grasp of the temperature a user's skin is useful to the health care based on grasp of a user's temperature, and grasp of a state of mind. Grasp of the humidity a user's skin is useful to the health care based on the condition of sweating of a user, and grasp of a state of mind. Grasp of vibration produced on a user's body can be grasped as information about the number of steps along which the user walked, and is

useful to a user's health care. An above-mentioned sensor may contact a user's skin and may be used by non-contact. Moreover, the installation location to a user's body is free. But in order to maintain the uniformity of biological information, it is desirable to fix the installation location to a user's body.

[0008] Attachment and detachment of an above-mentioned sensor means may be enabled to the cellular phone, and it may be attached in the body section. If it is immobilization, and it walks around with a cellular phone, and it is clear and is in the body section, grasp of the health care and a state of mind can be performed continuously. When attaching a sensor means in the body section for example, at a fixed target, the installation location is free. For example, the sensor means may be formed in the part which the hand contacts, in case a user uses a cellular phone among the body sections. Moreover, if it does in this way, since it will become easy to fix the contact part of the body of a sensor means and a user, the precision of the biological information to detect comes to be raised. In this case, a sensor means can be formed in the tooth back of for example, the body section. It seems to detect biological information again, when the cellular phone is being used for a sensor means. If it enables it to perform such detection automatically, it is not necessary to carry out specially and biological information can be detected. If the sensor means is formed in the part which the hand contacts in case a user uses a cellular phone among the body sections especially, it will become easy to perform such detection.

[0009] The same operation effectiveness as the 1st above-mentioned invention is acquired also by the following approaches. The display which can display the image of a predetermined character in the body section with which the front face is equipped Namely, a control means, From temperature, humidity, and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, It is the approach performed with a cellular phone. ************ -- said control means The process in which the biological information which contains at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body from said sensor means is received, It is the character method of presentation which performs the process which displays the image of said character changed based on said biological information which this reception means received on said display.

[0010] The same operation effectiveness as the 1st above-mentioned invention is acquired also by the following programs. The display which can display the image of a predetermined character in the body section with which the front face is equipped Namely, a control means, From temperature, humidity, and a predetermined sensor means to detect at least one of the vibration While the reception means and ** which

receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body are prepared To said computer of the cellular phone which comes to contain a computer, from said sensor means The processing which receives the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, It is the program in which computer reading for performing processing which displays the image of said character changed based on said biological information which this reception means received on said display is possible. This program may be carried in the cellular phone, and in case it performs predetermined processing, it may be downloaded from other equipments through a predetermined network. This program may realize above-mentioned processing again by collaboration with it and the hardware with which a cellular phone is equipped, and may perform above-mentioned processing by other programs and collaboration with hardware.

[0011] The cellular phone concerning the 2nd invention is as follows. The cellular phone concerning the 2nd invention is a cellular phone which comes to prepare for the front face of the body section the display which can display a predetermined character. And between the predetermined information processors which generate the image data for displaying the predetermined character which changes based on predetermined biological information on said display From the means of communications which communicates through a predetermined network, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, A record means to record said biological information which said reception means received, and a means to transmit said biological information currently recorded on said record means to said information processor to predetermined timing, It has a means to receive the image data generated based on the biological information through said network from said information processor, and a means to display the image of a character on said display based on the received image data. Also in this cellular phone, the same condition management as the cellular phone concerning the 1st invention based on biological information and grasp of a state of mind are possible. This cellular phone is presupposing again that he leaves generation of the image data for a character display to the possible information processor of communicating with the cellular phone concerned through a predetermined network. According to this cellular phone, the load of the information processing which should be performed with a cellular phone can be pressed down now.

[0012] Attachment and detachment also of the sensor means of the cellular phone concerning the 2nd invention may be enabled to the cellular phone, and it may be attached in the body section. When attaching the sensor means of the cellular phone concerning the 2nd invention for example, in a fixed target at the body section, the installation location is free, for example, in case a user uses a cellular phone, it can be established in the part which the hand contacts. The sensor means of the cellular phone concerning the 2nd invention can be formed in the tooth back of for example, the body section. It seems to detect biological information again, when the cellular phone is being used for a sensor means.

[0013] The same operation effectiveness as the 2nd above-mentioned invention is acquired also by the following approaches. The display which can display a predetermined character in namely, the body section with which the front face is equipped Between the predetermined information processors which generate the image data for displaying the predetermined character which changes based on predetermined biological information on said display The means of communications which communicates through a predetermined network, a control means, and temperature, The temperature information about the temperature of humidity and a predetermined sensor means to detect at least one of the vibration to a user's skin, A reception means to receive the biological information containing at least one of the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, The process in which are the approach performed with a record means to record said biological information, and the cellular phone, with which it comes to prepare **, and said control means records said biological information which said reception means received on said record means, The process in which said biological information currently recorded on said record means is transmitted to said information processor to predetermined timing, It is the character method of presentation which performs the process in which the image data generated based on the biological information is received through said network from said information processor, and the process which displays the image of a character on said display based on the received image data.

[0014] The same operation effectiveness as the 2nd above-mentioned invention is acquired also by the following programs. The display which can display a predetermined character in namely, the body section with which the front face is equipped Between the predetermined information processors which generate the image data for displaying the predetermined character which changes based on predetermined biological information on said display From the means of communications which communicates through a predetermined network, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating

information about vibration produced on a user's body, The processing which records said biological information which said reception means received to said computer of the cellular phone containing a computer on said record means while the record means and ** which record said biological information are prepared, The processing which transmits said biological information currently recorded on said record means to said information processor to predetermined timing, The processing which receives the image data generated based on the biological information through said network from said information processor, It is the program in which computer reading for performing processing which displays the image of a character on said display based on the received image data is possible. This program may be carried in the cellular phone, and in case it performs predetermined processing, it may be downloaded from other equipments through a predetermined network. This program may realize above-mentioned processing again by collaboration with it and the hardware with which a cellular phone is equipped, and may perform above-mentioned processing by other programs and collaboration with hardware.

[0015] Let the information processor used combining the 2nd cellular phone be the following, for example. The means of communications which communicates through a predetermined network in the body section which equips that front face with the display whose information processor of this can display a predetermined character, From a control means, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, It is the information processor which communicates through said network between a record means to record said biological information, and the cellular phone, with which it comes to prepare **. And it comes to have a means for it to be received with said receptionist means and to receive the biological information recorded on said record means from said cellular phone to predetermined timing through said means of communications and network, a means to generate the image data for displaying on the display of said cellular phone said character which changes based on the biological information, and a means to transmit said image data to said cellular phone through said network and said means of communications.

[0016] The same operation effectiveness as the above-mentioned information processor is acquired also by the following approaches. The means of communications which communicates through a predetermined network in the body section which equips the front face with the display whose approach of the can display a predetermined character, From a control means, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the

humidity of a user's skin, and the oscillating information about vibration produced on a user's body, It is the approach performed with the information processor which communicates through said network between a record means to record said biological information, and the cellular phone, with which it comes to prepare **, and comes to have an information processing means. And said information processing means is received with said receptionist means, and minds said means of communications and network for the biological information recorded on said record means. The process received from said cellular phone to predetermined timing, and the process which generates the image data for displaying on the display of said cellular phone said character which changes based on the biological information, It is the information processing approach of performing the process in which said image data is transmitted to said cellular phone through said network and said means of communications.

[0017] The same operation effectiveness as the above-mentioned information processor is acquired also by the following programs. For example, the means of communications which communicates through a predetermined network in the body section which equips the front face with the display which can display a predetermined character, From a control means, and temperature, humidity and a predetermined sensor means to detect at least one of the vibration A reception means to receive the biological information containing at least one of the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, Between a record means to record said biological information, and the cellular phone, with which it comes to prepare ** To said computer of the information processor which communicates through said network and comes to contain a computer It is received with said receptionist means and said means of communications and network are minded for the biological information recorded on said record means. The processing received from said cellular phone to predetermined timing, and the processing which generates the image data for displaying on the display of said cellular phone said character which changes based on the biological information, It is the program which performs processing which transmits said image data to said cellular phone through said network and said means of communications and in which computer reading is possible. This program may be recorded on the record medium with which an information processor is equipped, and may be read from the record medium of others whenever it performs. You may download from other equipments. This program may realize above-mentioned processing again by collaboration with it and the hardware with which an information processor is equipped, and may perform above-mentioned processing by other programs (for example, OS (operation system)) and collaboration with hardware.

[0018]

[Carrying of implementation of invention] Hereafter, with reference to a drawing, the

desirable 1st and 2nd operation gestalt of this invention is explained. It supposes that common agreement is given to the part which is common with the 1st operation gestalt and the 2nd operation gestalt, and overlapping explanation is given to omit.

[0019] The cellular phone K1 concerning the << 1st operation gestalt >> 1st operation gestalt has composition as been <u>drawing 1</u> (b) and (b) and shown. The cellular phone K1 is equipped with the body section 10, and has the composition of having attached the input key 20 and the display 30 in the front face in one. The connection terminal 40 is formed in the inferior surface of tongue of the body section 10, and the sensor 50 is formed in the tooth back. The circuit which is not illustrated for controlling this cellular phone K1 is allotted to the body section 10 interior.

[0020] The body section 10 is for example, a product made of resin, was formed in the abbreviation rectangular parallelepiped configuration small to extent which can be grasped single hand, and equips the upper part with the antenna 11. An antenna 11 performs data communication by the communication link by the telephone, or packet communication. The input key 20 is formed in the front lower part of the body section 10. In addition to the ten key, the input key 20 is constituted including some function keys. A user can operate this input key 20 and can input the data about the desired contents of actuation. The display 30 is formed in the front upper part of the body section 10. A predetermined image is displayed under control of the circuit mentioned above. The display 30 is constituted from this operation gestalt by the liquid crystal display. A sensor 50 shall detect biological information and the data about it shall be sent to a cellular phone K1. With this operation gestalt, by inserting in the connection terminal 40 the connector 52 connected by the cable 51, it connects with a cellular phone K1 electrically, and the above-mentioned data are sent through a cable 51 and a connector 52. Although based also on the hardware configuration by the side of a cellular phone K1, the gestalt of other connection, such as enabling it to send data by optical communication etc., is also employable. Biological information shall be information which is useful to a user's health care, grasp of a state of mind, etc., for example, the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body shall be included. Although the sensor 50 in this operation gestalt is not restricted to this, it can detect now temperature, humidity, and three physical quantity of vibration, detects biological information including three information, the temperature information about the temperature of a user's skin, the humidity information about the humidity of a user's skin, and the oscillating information about vibration produced on a user's body, and sends this to a cellular phone K1. The sensor 50 shall be touched by a user's skin with this operation gestalt, although it comes out so and a certain need is not not necessarily. Although the sensor 50 may be attached fixed to the body section 10, it is attached free [attachment and detachment] with this operation gestalt. This is because this sensor 50 can be used also with the existing cellular phone K1. Although

a sensor 50 is not restricted to this, it is formed in tabular [thin] and attached in the condition that it is united with the body section 10 at the tooth back of the body section 10. Although it is unquestioned, how to attach attaches the attachment which is not illustrated for fixing both, enabling free attachment and detachment in both sides with the field which counters the tooth-back section of the body section 10, and the body section 10 of a sensor 50, and he is trying to fix both to them with position relation with this operation gestalt. This sensor 50 contacts a user's hand, in case a user uses a cellular phone K1. A sensor 50 detects biological information, while the user is using the cellular phone. About the structure, it mentions later.

[0021] The circuit established in the interior of a cellular phone is **** shown in drawing 2 . As for the circuit of this example, CPU (Central Processing Unit)61, ROM (Read Only Memory)62, RAM (Random Access Memory)63, and an interface 64 are included. And ROM62, RAM63, and an interface 64 are connected with CPU61 through the bus. CPU61 is performing a predetermined program and performs predetermined processing. ROM62 has memorized the data of an image required to generate the image data which is needed in case the program for operating CPU61 and the display of the character mentioned later are performed on a display 30, the data about change of a character, etc. Moreover, the program for browser formation, a program required to realize a telephone function, data, etc. are recorded on ROM62 in this operation gestalt. RAM63 offers a work-piece field for CPU61 to perform data processing. An interface 64 functions as a connection circuit for I/O of CPU61. The connection terminal 40 connected with the above-mentioned antenna 11, an input key 20, a display 30, and a sensor 50 is connected with CPU61 through the interface 64. An interface 64 inputs into CPU61 the input data generated by actuation of an input key 20, and the data about the biological information generated by the sensor 50. In case telephone and packet communication are performed, the data exchanged by the antenna go in and out through this interface 64. Moreover, the image data for display 30 display which CPU61 generated is outputted to a display 30 through an interface 64. A display 30 performs the display based on this information.

[0022] In this cellular phone K1, functional block as showed the above-mentioned program currently recorded on ROM62 to drawing 3 by CPU61 performing is generated by that interior. In addition, the cellular phone K1 may hold this program from here, and could download it through the predetermined network. This program may be downloaded through a network predetermined whenever it performs a certain processing again. In this case, the program is not recorded on ROM62. This program may realize the following functions by collaboration with it and the hardware of a cellular phone K1, and may realize the following functions again by collaboration with other programs (for example, OS (operation system) program.) with which a cellular phone K1 is equipped in addition to these.

[0023] This cellular phone is equipped with the input receptionist section 110 and a control section 120 as shown in drawing 3 . The input receptionist section 110

analyzes the contents while receiving the data inputted from an antenna 11, an input key 20, and a sensor 50, and it has the function to tell it to a control section 120. A control section 120 controls the whole cellular phone. A control section 120 realizes the both sides of the function as a telephone of a cellular phone K1, and the function as an image processing system.

[0024] It has the main control section 121, the character decision section 122, the image information generation section 123, the data-logging section 124, and the communications control section 125, and the control section 120 is constituted, as shown in <u>drawing 3</u> . The main control section 121 controls the control-section 120 whole in generalization, and the following functions of the character decision section 122, the image information generation section 123, and the communications control section 125 are performed under control of this main control section 121. The main control section 121 controls a sensor 50 again. That is, control of whether biological information is made to detect in a sensor 50 to which timing is performed. The character decision section 122 determines the character displayed on a display 30 based on the information received from the sensor 50 through the input receptionist section 110. The information about the determined character is told to the image information generation section 123. The image information generation section 123 generates the image data for displaying the image of a predetermined character on a display 30 based on the information on the received character. The generated image data is sent to a display 30. The data (mainly image data) used in case the data used in case the character decision section 122 determines the character displayed on a display, and the image data for displaying the image of an image information generation section 123 predetermined character on a display 30 are generated are recorded on the data-logging section 124. Therefore, in case the character displayed on a display is determined based on the information received from the sensor 50, the character decision section 122 makes this decision using the data currently recorded on the data-logging section 124. Moreover, in case image data is generated based on the information on the character received from the character decision section 122, the image information generation section 123 generates these data using the data currently recorded on the data-logging section 124. In addition, what kind of thing is sufficient as a character. As long as it takes into consideration the ease of carrying out of a user's empathy, although the living thing in which a feeling expression is possible is desirable if it can do, a living thing, the thing which personified the inanimate object are sufficient as a character. The communications control section 125 performs control at the time of performing telephone and packet communication.

[0025] Actuation of this cellular phone K1 is explained. In this cellular phone K1, when the cellular phone K1 is used, detection of biological information is performed. In this cellular phone K1, the monitor of whether the cellular phone K1 is used is always performed (S201). A user operates an input key 20, and if it telephones or the information for performing packet communication is inputted with a cellular phone K1

(S201:Yes), the information will be sent to the main control section 121 through the input receptionist section 110. The main control section 121 which received this sends the information on to that effect to the communications control section 125. The communications control section 125 communicates based on this. On the other hand, the main control section 121 directs to detect biological information in a sensor 50 (S202). The sensor 50 which received these directions detects biological information, and generates the data about biological information (S203). This data is sent to a control section 120 through the input receptionist section 110. In addition, since the sensor 50 touches the hand of the user who is using the cellular phone K1, detection of biological information does not make special actuation give a user, but can also perform **.

[0026] This data is sent to the character decision section 122 through the main control section 121. The character decision section 122 determines the character which should be displayed on a display 30 based on this data and the above-mentioned data currently recorded on the data-logging section 124 (S204). Although change of this character could become what kind of thing as long as it was due to biological information, it should be matched with a user's condition or a state of mind. For example, if a user's condition is good, and if a user's state of mind is good, the mood of a character will become good, and conversely, if a user's condition is poor, and if a user's state of mind is poor, the character which should be displayed as a character becomes ill-humored can be changed. Or if a user's condition is good, and if a user's state of mind is good, a character will become fine, and conversely, if a user's condition is poor, and if a user's state of mind is poor, the character which should be displayed as the energy of a character is lost can be changed. With this operation gestalt, it is supposed that the example of this latter will be adopted. Since grasp of vibration which grasp of the temperature a user's skin contained in biological information expressed a user's temperature, and grasp of the humidity a user's skin expressed the condition of sweating of a user, and was produced on a user's body expresses the number of steps along which the user walked, it can judge the quality of a user's condition, and the quality of a state of mind based on these. Data for the data recorded on the data-logging section 124 to make such a judgment are recorded.

[0027] The data about the determined character are sent to the image information generation section 123. The image information generation section 123 generates the image data for displaying the determined character on a display 30 based on the received above-mentioned data and the data currently recorded on the data-logging section 124 (S205). The image of the character which should be displayed is beforehand recorded on the data-logging section 124. Generation of the above-mentioned image data is performed by reading the image data currently recorded on the data-logging section 124 based on the above-mentioned data received from the character decision section 122. The generated image data will be sent to a display 30, and the display of the image of a character which changed by this will be performed.

[0028] When a cellular phone K1 is not used (S201:No), above-mentioned processing is not performed. A condition as it is continues.

[0029] It << operation [2nd] gestalt >> Ranks second, and the 2nd operation gestalt is explained. The cellular phone K2 concerning the 2nd operation gestalt is the same as the cellular phone [in / at the point of the hardware configuration / the 1st operation gestalt] K1. Therefore, about the appearance, it is not different from the cellular phone K1 shown in drawing 1 . Like the cellular phone K1 of the 1st operation gestalt, the cellular phone K2 concerning the 2nd operation gestalt is equipped with an antenna 11, an input key 20, a display 30, and the connection terminal 40, is equipped with the body section 10 which built in the circuit, and the sensor 50 connected to the connection terminal 40, and is constituted. The physical quantity which can detect a sensor 50 is the same as that of the case of the 1st operation gestalt.

[0030] This cellular phone K2 can communicate now with Server S again through the predetermined network N formed of the Internet with this operation gestalt. Since this is realized, the browser ability implementation program is carried and a cellular phone K2 can peruse the information on web by the activation. The circuitry of the cellular-phone K2 interior is the same as that of the case of a cellular phone K1. However, the program for making the below-mentioned processing perform is recorded on the cellular phone K2 by ROM of a cellular phone K2. The environment where this program can be performed is prepared for the cellular phone K2. This program may perform the below-mentioned processing by collaboration with it and the hardware of a cellular phone K2, and may perform the below-mentioned processing by collaboration with it, hardware, and other programs of OS and others. In addition, this program may be offered through Network N from other equipments, such as the above-mentioned server S. In this case, that offered program is recorded on the record medium of ROM62 and others. Whenever it performs the below-mentioned processing, you may make it offer an above-mentioned program, when a program is offered. In this case, record of a program is unnecessary. As such a program, a Java program ("Java" is the trademark of Sun Microsystems, Inc.) can be used, for example.

[0031] In a cellular phone K2, when CPU11 performs the program currently recorded on ROM62, **** each functional block shown in drawing 6 is generated. That is, the cellular phone K2 is equipped with the input receptionist section 410 and a control section 420. The input receptionist section 410 analyzes the contents while receiving the data inputted from an antenna 11, an input key 20, and a sensor 50 like the cellular phone K1 of the 1st operation gestalt, and it has the function to tell it to a control section 420. A control section 420 controls the cellular-phone K2 whole. A control section 420 realizes the both sides of the function as a telephone of a cellular phone K2, and the function as an image processing system.

[0032] It has the main control section 421, the display control section 422, the

communications control section 423, and the living body data-logging section 424, and the control section 420 is constituted, as shown in drawing 6 . The main control section 421 controls the control-section 420 whole in generalization, and the following functions of the display control section 422 and the communications control section 423 are performed under control of this main control section 421. The main control section 421 controls a sensor 50 again. The display control section 422 transmits the received image data to a display 30, and displays a desired image on a display 30. The communications control section 423 performs control at the time of performing telephone and packet communication. The data about biological information sent to the main control section 421 from the sensor 50 are recorded on the living body data-logging section 424. This data is suitably read to the communications control section 423, and is sent to Server S through Network N.

[0033] On the other hand, Server S is as follows. This server S is constituted by the general-purpose computer. It enables it to read Server S by the body of a computer in the program and data which were recorded on the freely exchangeable record media R, such as portability disks (CD-ROM, DVD-ROM, etc.) and a memory card. By carrying out collaboration activation with other program codes in the operating system (below Operating system:, "OS") with which program independence or the body of a computer concerned has this from origin, or equipment The below-mentioned processing demanded as an information processor by this invention can be performed now.

[0034] The server S by this operation gestalt which read the above-mentioned program forms in the interior **** functional block shown in drawing 7 . That is, Server S is constituted including the appearance input section 510 and a control section 520.

[0035] The appearance input section 510 performs the communication link through Network N. With this operation gestalt, the communication link with a cellular phone K2 can be performed now through Network N. A communication link can be performed now on both sides.

[0036] A control section 520 performs generalization-control of this whole server S. Moreover, processing of the following required to display a character on a cellular phone K2 is performed. A control section 520 is equipped with the main control section 521, the character decision section 522, the image information generation section 523, and the data-logging section 524 again, and is constituted. The main control section 521 controls the control-section 520 whole in generalization, and each processing by the character decision section 522 and the image information generation section 523 is performed under control of this main control section 521. The character decision section 522 determines the character displayed on a display 30 through the appearance input section 510 based on the biological information received from the cellular phone K2. The information about the determined character is told to the image information generation section 523. The image information

generation section 523 generates the image data for displaying the image of a predetermined character on the display 30 of a cellular phone K2 based on the information on the received character. The generated image data is sent to a cellular phone K2 through the appearance input section 510 and Network N. The data same with having been recorded on the data-logging section 524 of a cellular phone 1 are recorded on the data-logging section 524. In case the character displayed on a display is determined based on the information received from the sensor 50, the data currently recorded on the data-logging section 524 are used for the character decision section 522. Moreover, in case image data is generated based on the information on the character received from the character decision section 522, the data currently recorded on the data-logging section 524 are used for the image information generation section 523.

[0037] The processing performed by this system constituted including a cellular phone K2 and Server S is explained with reference to drawing 8 . Drawing 8 is drawing having shown the flow of the processing performed by the cellular phone K2 and Server S. In this cellular phone K2, when the cellular phone K2 is used, detection of biological information is performed. In this cellular phone K2, the monitor of whether the cellular phone K2 is used is always performed. A user operates an input key 20, and if it telephones or the information for performing packet communication is inputted with a cellular phone K2 (S601), the information will be sent to the main control section 421 through the input receptionist section 420. The main control section 421 which received this sends the information on to that effect to the communications control section 423. The communications control section 423 communicates based on this. On the other hand, the main control section 421 directs to detect biological information in a sensor 50 (S602). The sensor 50 which received these directions detects biological information, and generates the data about biological information (S603). This data is sent to a control section 420 through the input receptionist section 420. A control section 420 sends this data to the living body data-logging section 424, and records it (S604). In addition, since the sensor 50 touches the hand of the user who is using the cellular phone K2, detection of biological information does not make special actuation give a user, but can also perform **.

[0038] The above-mentioned data about biological information are sent to Server S, when a user performs actuation for performing the transmission. In order to make this possible, the monitor of whether there was any demand of transmission of the data about biological information is always performed by the main control section 421. In addition, this demand is inputted by actuation of an input key 20, and is sent to the main control section 421 through the input receptionist section 410. If there is a demand of transmission of data, the main control section 421 directs to perform data transmission of ecology information to the communications control section 423. The communications control section 423 reads the data about biological information from

the living body data-logging section 424, and sends them to Server S through Network N (S605).

[0039] This data is received in the appearance input section 510 of Server S, and is sent to the character decision section 522 through the main control section 521. The character decision section 522 determines the character which should be displayed on a display 30 based on this data and the above-mentioned data currently recorded on the data-logging section 524 (S606). If change of this character is due to biological information, it is the same as that of the 1st operation gestalt about the point which may be what kind of thing.

[0040] The data about the determined character are sent to the image information generation section 523. The image information generation section 523 generates the image data for displaying the determined character on the display 30 of a cellular phone K2 based on the received above-mentioned data and the data currently recorded on the data-logging section 524 (S607). The image of the character which should be displayed is beforehand recorded on the data-logging section 524. Generation of the above-mentioned image data is performed by reading the image data currently recorded on the data-logging section 524 based on the above-mentioned data received from the character decision section 522. The generated image data is sent to the appearance input section 510, and is sent to a cellular phone K2 through Network N (S608).

[0041] A cellular phone K2 receives this data in that input receptionist section 410. This data is sent to the display control section 422 through the main control section 421. The display control section 422 sends this received image data to a display 30. The image of a character which changed based on biological information will be displayed on a display by this (S609).

[0042]
[Effect of the Invention] Since the cellular phone by this invention is above, it becomes the health care and a thing suitable for performing grasp of a state of mind.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The perspective view showing a general view of the cellular phone by the 1st operation gestalt of this invention.
[Drawing 2] The internal configuration Fig. of the cellular phone shown by drawing 1 .
[Drawing 3] The block diagram showing functional block generated in the cellular phone shown by drawing 1 .
[Drawing 4] Drawing showing the flow of the processing performed with the cellular

phone shown by <u>drawing 1</u> .
[<u>Drawing 5</u>] Drawing showing roughly the system constituted using the cellular phone concerning the 2nd operation gestalt of this invention.
[<u>Drawing 6</u>] The block diagram showing functional block generated in the cellular phone shown by <u>drawing 5</u> .
[<u>Drawing 7</u>] The block diagram showing functional block generated in the server shown by <u>drawing 5</u> .
[<u>Drawing 8</u>] Drawing showing the flow of the processing performed by the system shown by <u>drawing 5</u> .
[Description of Notations]
10 Body Section
11 Antenna
20 Input Key
30 Display
40 Connection Terminal
50 Sensor
110 Input Receptionist Section
120 Control Section
121 Main Control Section
122 Character Decision Section
123 Image Information Generation Section
124 Data-Logging Section
125 Communications Control Section
410 Input Receptionist Section
420 Control Section
421 Main Control Section
422 Display Control Section
423 Communications Control Section
424 Living Body Data-Logging Section
510 Appearance Input Section
520 Control Section
521 Main Control Section
522 Character Decision Section
523 Image Information Generation Section
524 Data-Logging Section
K Cellular phone
N Network
R Record medium
S Server